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(54) Title: PAPER SIZING COMPOSITION

(57) Abstract: The invention relates to the sizing of paper and board using alkenyl succinic anhydride (ASA). The invention provides a sizing composition which comprises an aqueous emulsion of an ASA wherein the ASA incorporates a maximum of 1% by weight (preferably a maximum of 0.5 % by weight) of polymeric residues. The composition may incorporate less than 0.5 % by weight of olefins. Paper sizing compositions in accordance with the invention provide enhanced resistance to penetration of the edges of paper and board by agents such as hot hydrogen peroxide and lactic acid.

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(71) Applicant (for all designated States except US): **RAISIO CHEMICALS LTD** [FI/FI]; Raisio Kaari 60, FIN-21200 Raisio (FI).

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 30039 A (NESTE OY ;MAEKIPEURA PETRI (FI); KAPANEN MIKA (FI); TULISALO JUKKA) 21 August 1997 (1997-08-21) page 7, paragraph 4 -page 8, paragraph 1; claims 1-13 page 11, paragraph 1 ---	1,5,10
X	EP 0 359 316 A (PROCTER & GAMBLE) 21 March 1990 (1990-03-21) page 2, line 41-46; claims 1-8 ---	1,5,10
A	US 5 939 562 A (HALME ERKKI ET AL) 17 August 1999 (1999-08-17) the whole document ---	1-12
A	US 6 359 093 B1 (OYANAGI SHOKO ET AL) 19 March 2002 (2002-03-19) the whole document ---	1-12
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 611 087 A (MORIYAMA NOBORU ET AL) 9 September 1986 (1986-09-09) the whole document	1-12
A	US 5 603 997 A (LINDGREN ERIK ET AL) 18 February 1997 (1997-02-18) the whole document	1-12

INTERNATIONAL SEARCH REPORT

Information on patent family members

Internal

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9730039	A	21-08-1997	FI 960639 A	14-08-1997
			AT 207476 T	15-11-2001
			AU 1068097 A	02-09-1997
			DE 69616383 D1	29-11-2001
			DE 69616383 T2	11-07-2002
			EP 0883614 A1	16-12-1998
			WO 9730039 A1	21-08-1997
EP 0359316	A	21-03-1990	AT 117683 T	15-02-1995
			CA 1300636 C	12-05-1992
			DE 68920806 D1	09-03-1995
			EP 0359316 A1	21-03-1990
			TR 25233 A	30-11-1992
			US 4956478 A	11-09-1990
US 5939562	A	17-08-1999	FI 96418 B	15-03-1996
			AU 3653995 A	02-05-1996
			CA 2201869 A1	18-04-1996
			EP 0804429 A1	05-11-1997
			WO 9611193 A1	18-04-1996
			JP 10506909 T	07-07-1998
US 6359093	B1	19-03-2002	JP 9048748 A	18-02-1997
			JP 9048749 A	18-02-1997
			JP 9052867 A	25-02-1997
			JP 9067415 A	11-03-1997
			JP 9157311 A	17-06-1997
			JP 9059214 A	04-03-1997
			US 6057412 A	02-05-2000
			DE 69603789 D1	23-09-1999
			DE 69603789 T2	02-12-1999
			EP 0747342 A1	11-12-1996
			JP 9052872 A	25-02-1997
			KR 221558 B1	15-09-1999
			US 5872287 A	16-02-1999
US 4611087	A	09-09-1986	JP 59128353 A	24-07-1984
			JP 59116249 A	05-07-1984
			DE 3340380 A1	30-05-1984
US 5603997	A	18-02-1997	SE 469080 B	10-05-1993
			AT 115493 T	15-12-1994
			AU 659226 B2	11-05-1995
			AU 2729592 A	20-05-1993
			BR 9204149 A	29-06-1993
			CA 2081081 A1	29-04-1993
			DE 69200913 D1	26-01-1995
			DK 540075 T3	18-04-1995
			EP 0540075 A1	05-05-1993
			ES 2065744 T3	16-02-1995
			FI 924820 A	29-04-1993
			JP 2538487 B2	25-09-1996
			JP 5230794 A	07-09-1993
			KR 9614919 B1	21-10-1996
			NO 924142 A ,B,	29-04-1993
			NZ 244867 A	26-07-1995
			RU 2104240 C1	10-02-1998
			SE 9103139 A	29-04-1993